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Abstract :

The LCA is expected to incorporate advanced aerodynamic and flight control features, with high AoA capabilities and high agility. Due to our limited design data bank and lack of experience in FBW technology, several uncertainties may not be resolved even at the prototype first flight stage. Hence a study was conducted to explore the feasibility of fabricating and flight-testing a 80% scaled derivative aircraft to provide flight mechanics and flight control data for the LCA.

This aircraft would be made from rigid-foam-FRP composite materials, using techniques developed at NAL. It would have an gross weight of 2500 kg and the Viper 22/8 engine is suggested as the powerplant because of availability. Preliminary design has been started and basic parameters are mentioned.

It is felt that this experimental program will be crucial for the success of the LCA. The time element is the most challenging aspect in this situation. A 2½ year time frame seems to be possible if financial and manpower support are available. It is expected that this study will initiate a dialogue between NAL, HAL and MBB to formulate a joint program for the fabrication and flight-testing of the experimental LCA.